

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-015636**Date Inspected:** 14-Jul-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1000**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

<b>CWI Name:</b>	William Sherwood and Bernie Do			<b>CWI Present:</b>	<b>Yes</b>	<b>No</b>	
<b>Inspected CWI report:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
				<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Bridge No:</b>	34-0006			<b>Component:</b>	Orthotropic Box Girder		

**Summary of Items Observed:**

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At the E-line top deck, QA randomly observed ABF/JV qualified welder Fred Kaddu continuing to perform fillet welding all around ¾" diameter X 12" long bolt to the cantilever bike path support. The welder was noted adding more weld to the existing fillet weld that was welded from ZPMC, China per Contractor Change Order CCO 99. The welder was observed welding in the 2F (horizontal) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-F1200A Rev. 1. The existing fillet weld connection was preheated to more than 150 degree Fahrenheit using propane gas torch prior welding. The welding activity was monitored by ABF QC William Sherwood. During the shift, the welder has completed the 10mm fillet weld on 16 connections (four bike path supports with 4 bolts per support) and was working on the 5th support at the end of the shift.

At OBG L5E/L6E side plate 'E', welding of the splice butt joint at location 200mm to 1000mm inside using manual FCAW-G welding and SMAW welding at location 0mm to 200 were seen completed. During the shift, ABF welder Songtao, Huang was noted moving the Bug-o motorized track to the lower elevation (7545mm to 9955mm) of the splice butt joint and after moving his track, he was noted fixing the Miller Proheat 35 Induction Heating System blankets outside the joint. QA randomly observed ABF/JV qualified welder Sungtao, Huang ID # 3794 waited for the plates to attain the required preheat before continuing to perform CJP groove (splice) welding. After attaining the required preheat, the welder was observed performing automatic root pass welding in the 3G

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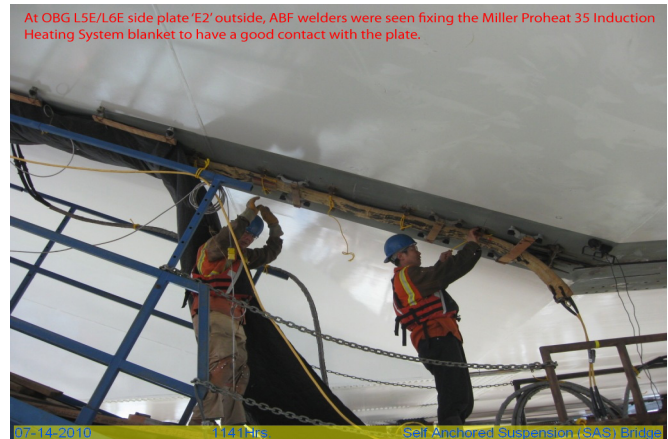
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(vertical) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3042A-1. The joint being welded had a single V-groove butt joint with backing bar. The splice joint was preheated and maintained to greater than 150 degrees Fahrenheit using Miller Proheat 35 Induction Heating System located at the opposite side of the plate prior/during welding. ABF Quality Control (QC) Bernie Docena was noted monitoring the welding parameters of the welder. At the end of the shift, fill pass welding was still continuing and welding of the splice at the mentioned above location was not completed.

At OBG L4E/L5E bottom plate 'D' outside, QA randomly observed ABF/JV qualified welder Rick Clayborn perform CJP groove welding repair. The welder was observed welding in the 4G (overhead) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1000-Repairs. The weld repairs were excavated to a boat shape. The repair excavations were preheated to more than 140 degree Fahrenheit using propane gas torch prior welding. During the shift, ABF QC William Sherwood was noted monitoring the welder. Prior welding, ABF QC William Sherwood was also observed performing Magnetic Particle Testing (MT) on the repair excavations. During the shift, the welder has completed four welding repairs from the outside and this should complete all the repairs on this plate.



### Summary of Conversations:

At OBG L3E/L4E bottom plate 'D' outside, repair welding of the splice butt joint was completed but one ABF personnel was still flush grinding. During the grinding process, the direction of the grinding cut was noted across the direction of the tension of the bridge which was contrary to the contract requirements. Due to this discovery, QA reminded ABF QC William Sherwood to inform the personnel doing the grinding about this requirement.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Mohammad Fatemi (916) 227-5298, who represents the Office of Structural Materials for your project.

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**Inspected By:** Lizardo, Joselito

Quality Assurance Inspector

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**Reviewed By:**      Levell,Bill

QA Reviewer